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FILE 'HCAPLUS, INSPEC, JAPIO, USPATFULL, USPAT2' ENTERED AT 10:23:01 ON 23 NOV 2004

L1 2381 S (ZNO OR ZINC(W) OXIDE) (8A) (SINGLE(W) CRYSTAL# OR MONO(W) CRYSTAL  
L2 647869 S (BULK)  
L3 251 S L1 AND L2  
L4 1052 S (OHM(W) CENTIMETER)  
L5 251 S L1 AND L2 AND L3  
L6 289404 S (RESISTIVITY)  
L7 41 S L5 AND L6

=> s l3 and (bridgman)

L8 4 L3 AND (BRIDGMAN)

=> d l8 1-4 abs,bib

L8 ANSWER 1 OF 4 HCAPLUS COPYRIGHT 2004 ACS on STN  
AB A review. The UV laser based on the wurtzite ZnO makes ZnO a hot spot crystal. With the combination of many excellent properties, ZnO will be the next generation optoelectronic material. The research on ZnO crystal is very important not only for basic studies but also for application. The methods for growing **bulk** ZnO crystals are flux, hydrothermal, vapor phase and **Bridgman** method, etc., and these methods should be improved for growing large and high quality ZnO crystals.

AN 2004:262478 HCAPLUS  
DN 141:130419  
TI Research progress of **ZnO single crystal**  
AU Song, Ci; Hang, Yin; Xu, Jun  
CS Shanghai Inst. Optics and Fine Mechanics, Shanghai, 201800, Peop. Rep. China  
SO Rengong Jingti Xuebao (2004), 33(1), 81-87  
CODEN: RJXUEN; ISSN: 1000-985X  
PB Rengong Jingti Xuebao Bianjibu  
DT Journal; General Review  
LA Chinese

L8 ANSWER 2 OF 4 HCAPLUS COPYRIGHT 2004 ACS on STN  
AB This invention describes a method of producing ZnO crystals having resistivity of at least  $1.5 \times 10^3$  ohm-centimeter ( $\Omega$ -cm) from a melt contained by solid-phase ZnO to prevent introduction of undesired impurities into the crystal. The crystal can be a **bulk** single crystal that is cut and processed into wafer form of specified thickness. A dopant in a concentration ranging from  $1 \times 10^{15}$  atoms per cubic centimeter (atoms/cc) to  $5 \times 10^{21}$  atoms/cc can increase resistivity of the crystal relative to intrinsic ZnO. The dopant can be Li, Na, Cu, nitrogen, P, and/or Mn.

AN 2004:251808 HCAPLUS  
DN 140:278763  
TI Semi-insulating **bulk zinc oxide single crystal**  
IN Nause, Jeff; Nemeth, William Michael  
PA Cermet, Inc., USA  
SO U.S. Pat. Appl. Publ., 5 pp.  
CODEN: USXXCO

DT Patent  
LA English

FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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PI US 2004055526 A1 20040325 US 2003-602185 20030623  
PRAI US 2002-391518P P 20020624

L8 ANSWER 3 OF 4 HCAPLUS COPYRIGHT 2004 ACS on STN  
AB The processes of damage in oriented ZnSe, CdS, ZnS, CdTe crystals under the effect of intensive radiation of CO<sub>2</sub> laser were studied, the crystals being grown by the **Bridgman** method. The dependence of the damage pattern on the crystal structure and orientation was found. Types of cracks, changes in the dislocational structure and chemical composition of films around the damage crater were studied. Exptl. determined were the values of laser damage threshold on different crystallog. planes of AIIBVI crystals. Optical and thermomech. characteristics of optical elements of crystalline Zn selenide with interference coatings of Zn oxide made by the original method of photostimulated oxidizing were studied. Such optical elements are characterized by high values of laser damage threshold, thermal stability and thermal strength. Revealed and studied was the effect of **bulk** glow of ZnSe crystals at their local irradiation with intensive radiation of CO<sub>2</sub> laser. This effect precedes the sample damage and is observed in crystals with the concentration of the Cu impurity  $2 + 10^{-5}$  ...  $3 + 10^{-4}$  wt%.

AN 1998:370841 HCAPLUS

DN 129:142439

TI Peculiarities of laser damage of AIIBVI single crystals

AU Zagoruiko, Yu. A.; Fedorenko, O. A.

CS Department of Optical and Constructional Crystals of Scientific and Technological Concern "Institute for Single Crystals", Kharkov, 310001, Ukraine

SO Proceedings of SPIE-The International Society for Optical Engineering (1998), 3244 (Laser-Induced Damage in Optical Materials: 1997), 650-655  
CODEN: PSISDG; ISSN: 0277-786X

PB SPIE-The International Society for Optical Engineering

DT Journal

LA English

RE.CNT 11 THERE ARE 11 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L8 ANSWER 4 OF 4 INSPEC (C) 2004 IEE on STN

AN 2004:8068940 INSPEC DN A2004-19-8110F-042; B2004-10-0510-001

AB The UV laser based on the wurtzitic ZnO makes ZnO a hotspot crystal. With the combination of many excellent properties, ZnO will be the next generation optoelectronic material. The research on ZnO crystal is very important not only for basic studies but also for application. The methods for growing **bulk** ZnO crystals are flux, hydrothermal, vapor phase and **Bridgman** method, etc, and these methods should be improved for growing large and high quality ZnO crystals.

DN A2004-19-8110F-042; B2004-10-0510-001

TI Research progress of **ZnO single crystal**.

AU Song Ci; Hang Yin; Xu Jun (Shanghai Inst. of Opt. & Fine Mech., China)

SO Journal of Synthetic Crystals (Feb. 2004) vol.33, no.1, p.81-7. 41 refs.

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DT Journal

TC Experimental

CY China

LA English

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10/602, 185

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Claim 14,

102(B) Ref

Claim 14

